AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Amend the paragraph beginning on page 1, line 19 as follows:

Fig.1B shows another conventional example. In this example, ~~stripe-like recessed~~ triangular recesses and protrusions 3 having a triangular cross section are formed on the top of a semiconductor substrate 1a by similar techniques.

Amend the paragraph beginning on page 1, line 23 as follows:

The conventional techniques for preparing stripe-like recesses and protrusions or recesses and protrusions having a triangular cross section on the top of the metal or ceramic substrate 1 or the semiconductor substrate 1a are described in the following references: [[.]]

Patent Reference 1: JP-A-7-173649

Patent Reference 2: JP-A-8-320506

Amend the paragraph beginning on page 2, line 19 as follows:

Figs.2A and 2B ~~is~~ are explanatory views showing the operation principle of this invention.

Amend the paragraph beginning on page 2, line 21 as follows:

Fig.3A is a perspective view showing an exemplary embodiment of the active diffraction grating according to this invention. Figs.3B, 3C and [[3C]] 3D are two plan [[views]] views and a sectional view of the embodiment, respectively.

Amend the paragraph beginning on page 6, line 7 as follows:

Fig. [[3B']] 3C shows a state where spot electrodes to which a voltage is applied function as one line.

Amend the paragraph beginning on page 6, line 24 as follows:

In Figs.3A to [[3C]] 3D, a voltage is applied to spot electrodes indicated by black spots that have an angle θp to the traveling direction of an incident light beam K, of the N spot electrodes 12 arranged in the matrix form, and the lower electrode 13. Corresponding to the electrodes to which the voltage is applied, changes in refractive index (lowering of refractive index) occur in the form of straight lines in the optical waveguide 11.

Amend the paragraph beginning on page 7, line 17 as follows:

Figs.4A to 4D are views showing operating parameters of the diffraction grating of this invention shown in Figs.3A to [[3C]] 3D. Fig.4A shows an example in which four straight lines having an angle θp to the traveling direction of incident light are formed. The more such lines are formed (for example, several hundred to several thousand), the stronger the output of diffracted light can be.

Amend the abstract of the disclosure as follows:

~~An active diffraction grating that has a high degree of freedom in control, small size and high reliability is realized. The active diffraction grating comprises an optical waveguide formed on a two-dimensional plane and electrodes formed on both sides of the optical waveguide, wherein one of the electrodes is formed as plural spot electrodes at a constant spacing in a matrix form on the two-dimensional plane, and with respect to the size of the spot electrodes and the distance between the spot electrodes, the spot electrodes are small and dense enough to function as a line when the spot electrodes are arrayed in a straight line within the diameter of light incident on the optical waveguide, and wherein plural spot electrodes of the spot electrodes arranged in the matrix form are selected and~~ When a voltage is applied to plural spot electrodes selected from the spot electrodes arranged in the matrix form and ~~thereto so as to form at least two parallel lines having a predetermined angle to the traveling direction of the light incident on the optical waveguide, and when~~ the light incident on the two-dimensional plane waveguide is reflected by ~~said~~ at least two parallel lines, the refractive index of the optical waveguide is partly changed so that the wavelength of the light, the angle of the two lines to the incident light and the distance between the lines satisfy [[a]] the Bragg reflection condition.